

## **2.1.7 Visual/Aesthetics**

### **2.1.7.1 Regulatory Setting**

The National Environmental Policy Act of 1969 as amended (NEPA) establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings (42 U.S.C. 4331[b][2]). To further emphasize this point, FHWA, in its implementation of NEPA (23 U.S.C. 109[h]), directs that final decisions on projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

CEQA establishes that it is the policy of the state to take all action necessary to provide the people of the state “with...enjoyment of *aesthetic*, natural, scenic, and historic environmental qualities” (CA PRC Section 21001[b]).

### **2.1.7.2 Affected Environment**

This section has been prepared based on the analysis and findings presented in the *Visual Impact Assessment* (April 2017).

This section describes the aesthetic and visual resource conditions within the project limits. The section also discusses potential aesthetic impacts that could result from implementation of the proposed project build alternatives. A program of minimization measures is also included. Consistent with requirements, the Visual Impact Assessment (VIA) uses a quantitative methodology and has tables for each key view to show impact ratings; conclusions in the text below for each key view is summarized from the VIA and these tables.

The visual impacts of the proposed project were determined by dividing the views into landscape or character units that have distinct, but not necessarily homogenous, visual character. The view of the motorist is also considered as a separate character unit. Typical views are selected for each unit to represent the views to/from the project. Key viewpoints are usually selected to represent the typical views within the landscape units or project area for a more in-depth study that can include sketches or simulations to depict changes to the visual environment. The following seven steps were performed to assess the visual impacts of the proposed project:

- Define the project setting and viewshed
- Identify the regulatory setting of the project area

- Identify key views for visual assessment
- Analyze existing visual resources and viewer response
- Depict the visual appearance of project alternatives
- Assess the visual impacts of the project alternatives
- Propose methods to minimize or mitigate adverse visual impacts

### ***Visual Setting***

This portion of I-405 passes through a section of Orange County where the landscape is dominated by rolling hills and valleys. While most of the lands adjacent to the corridor are developed, this portion of the county was developed more recently than the northern sections. Consequently, many of the communities were master planned and appear less dense and with more open spaces than in the older portions of the county. Open space includes the Irvine Open Space Preserve along the SB lanes of I-405 between Jeffrey Road and Sand Canyon Avenue. This open space provides a window into how this portion of the county looked predevelopment. However, no officially designated or eligible scenic routes have been identified by Caltrans within the project area.

The northern portion of the project area, north of the San Diego Creek crossing near Jamboree Road, and the southern portion, around SR-133, are dominated by multi-story office buildings. Between these areas, development is primarily residential in nature. In general, development of the project corridor can be classified as suburban in nature, from suburban office parks, large commercial areas, and residential, both multi- and single-family.

### ***Viewshed and Visual Assessment Units***

The project corridor was divided into a series of “outdoor rooms” or visual assessment units. Each visual assessment unit has its own visual character and visual quality. It is typically defined by the limits of a particular viewshed or by an area of similar visual character and/or land uses. In the case of the I-405 South Improvement Project, three visual assessment units were identified by their distinctive land uses. The units and the associated locations for each key viewpoint can be seen in Figure 2.1.7-1 and are described in more detail below.

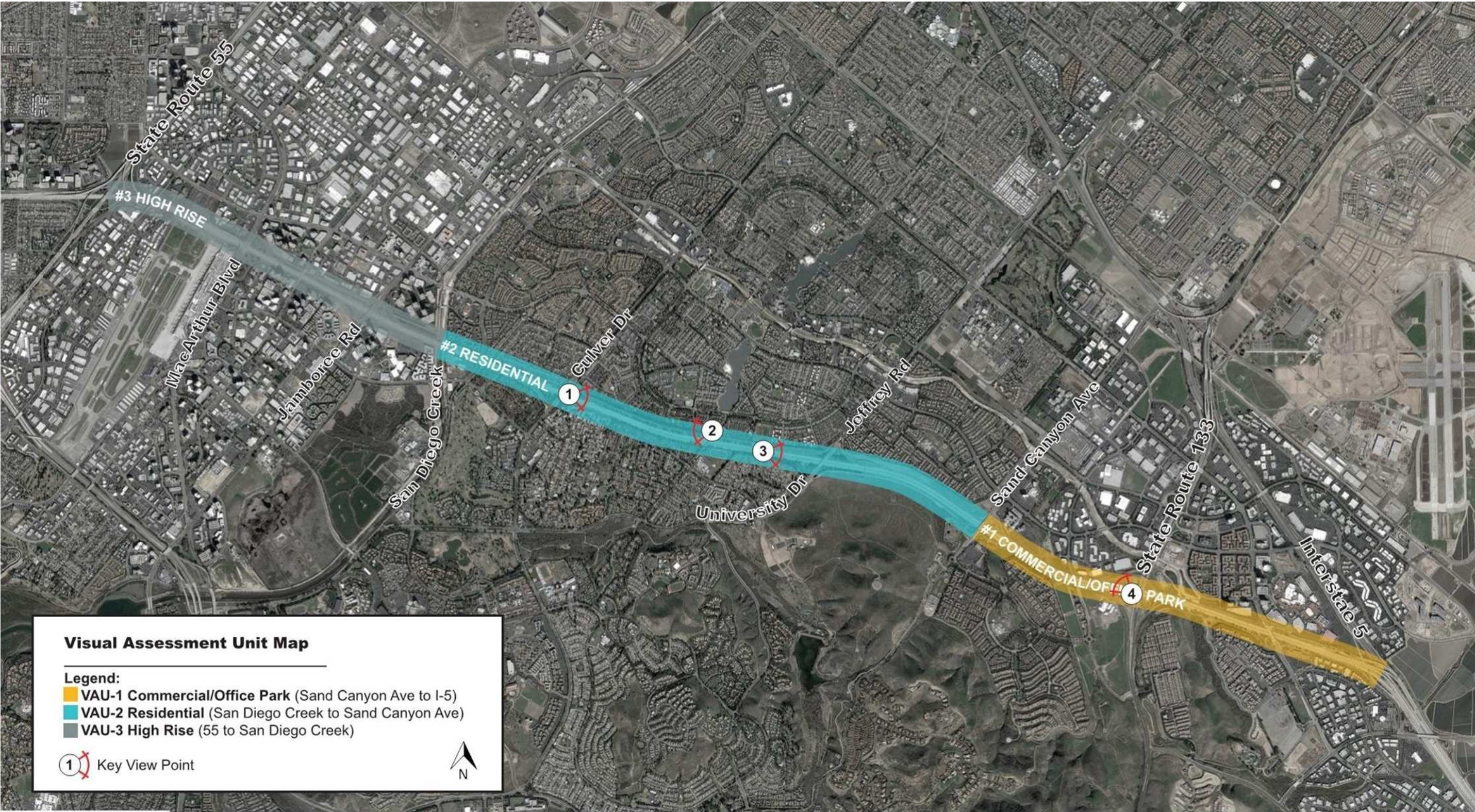


Figure 2.1.7-1. Visual Assessment Unit Map with Key Viewpoint Locations

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### **Visual Assessment Unit 1 – Office Park/Commercial**

Visual Assessment Unit 1 covers the portion of the corridor from the I-405/I-5 merge through the SR-133 interchange to the Sand Canyon Avenue OC. Development in this area is a combination of office parks, particularly in and around the SR-133 interchange, and commercial, which is associated with the Irvine Spectrum development near the Irvine Center Drive OC. There is also a substantial residential component to this unit, particularly along the west side of I-405 and north of the Irvine Spectrum development.

### **Visual Assessment Unit 2 – Residential**

Visual Assessment Unit 2 is dominated by residential-type development, both single- and multi-family. The unit extends from the Sand Canyon Avenue OC to the San Diego Creek Channel south of Jamboree Road. In addition to the residential development on both sides of I-405, there is a large open space presence associated with the Irvine Open Space Preserve, which is located on the west side of I-405 between University and Shady Canyon drives.

### **Visual Assessment Unit 3 – High Rise Office**

Visual Assessment Unit 3 comprises the northern third of the project corridor, extending from the San Diego Creek crossing, south of Jamboree Road, northward to the SR-55 interchange in Costa Mesa. The unit is dominated by multi-story office buildings, particularly in the Jamboree Road area.

In addition to the office buildings, Santa Ana/John Wayne Airport is located on the west side of I-405 at the northern end of the project area, near the SR-55 interchange.

### ***Viewer Groups***

There are two major types of viewer groups for transportation projects: neighbors and transportation users. Each viewer group has their own particular level of viewer exposure and viewer sensitivity, resulting in distinct and predictable visual concerns for each group, which help to predict their responses to visual changes.

### **Neighbors (Views to the Project)**

Neighbors are people who have views to the project. They can be subdivided into different viewer groups by land use. For example, residential, commercial, industrial, retail, institutional, civic, educational, recreational, and agricultural land uses may generate neighbors or viewer groups with distinct reasons for being in the corridor and therefore having distinct responses to changes in visual resources. For this project the following neighbors were considered:

- Viewers associated with the businesses adjacent to the corridor, particularly those in high-rise buildings that face I-405
- Residents that live in the neighborhoods along the corridor
- Trail users

### **Transportation Users (Views from the Project)**

Transportation users are people who have views from the project, in this case from either local roadways or from the project corridor itself. They can be subdivided into different viewer groups in two different ways—by mode of travel or by reason for travel. For example, subdividing highway users by mode of travel may yield pedestrians, bicyclists, transit riders, car drivers and passengers, and truck drivers. Dividing highway users or viewer groups by reason for travel creates categories such as tourists, commuters, and haulers. It is also possible to use mode and reason for travel simultaneously, creating a category such as bicycling tourists. For this project, the following transportation users were considered:

- Viewers traveling along I-405
- Viewers traveling along cross streets over I-405
- Pedestrians/bicyclists using the two existing pedestrian OCs

### ***Visual Resources***

Visual resources of the project setting are defined and identified below by assessing visual character and visual quality in the project corridor.

### **Visual Character**

Visual character includes attributes such as form, line, color, and texture, and it is used to describe, not evaluate (i.e., these attributes are considered neither good nor bad); however, a change in visual character can be evaluated when it is compared with the viewer response to that change. Changes in visual character can be identified by how visually compatible a proposed project would be with the existing condition by using visual character attributes as an indicator. For this project, the following attributes were considered:

- **Form:** The visual mass or shape of the project or element.
- **Dominance:** The presence of an element as measured between large to small.
- **Line:** Edges or linear definition, measured between strong and clear lines to fuzzy or indistinct edges.

- **Scale:** The proportion or size of an element or elements within a particular view as measured between small to monumental.
- **Continuity:** This term describes how one image flows into the next to create a continuous set of views as a viewer travels along a pathway. Continuity is measured on a scale between harmonious and dissonant.

The existing I-405 through the project area is a multi-lane freeway with four to five lanes in each direction; however, unlike many such wide freeways, the ROW is wide enough to allow for trees and other landscaping along I-405, giving the corridor a more aesthetic appeal than other corridors. Unique in this corridor is the number of trails that are immediately adjacent to I-405. Beginning at the San Diego Creek Channel crossing and extending south to Irvine Center Drive (with a break at the SR-133 interchange), there are trails or bikeways on one or both sides of I-405. These trails are landscaped to varying degrees. Several existing soundwalls or project walls can be found, particularly within the Residential Unit, at the outside edge of the trail area.

Local streets in this portion of I-405 cross over the existing freeway on a series of bridges, called overcrossings. For users of these bridges, there are views into the I-405 corridor, particularly for pedestrians and bicyclists whose travel is slower. Most of these bridges are relatively new construction and designed to include several aesthetic elements, including stamped slope paving and fencing with vinyl coating.

- **Visual Assessment Unit 1 – Office Park/Commercial:** This unit has a mix of land uses associated with its development. These include office buildings – including some multi-story high-rise, commercial areas – especially those associated with the Irvine Spectrum area, and multi-family residential. The developments in the unit are relatively new, and some buildings are currently under construction. Most of the ROW that is not paved is landscaped, including mature trees, shrubs, and groundcovers. Figure 2.1.7-2 shows a typical view from the travel lanes in this unit.

I-405 and its associated OC dominate many of the views in this unit. From views outside of the corridor, many of these views are obscured by soundwalls (particularly in residential locations) and by freeway landscaping. Cross streets over I-405 have views into the corridor, particularly for bicyclists and pedestrians because they are at the outside edge of the bridge and travel slower. These viewers would have more chance to take in the visual character of the corridor.



**Figure 2.1.7-2. NB I-405 just North of the Irvine Center Drive Overcrossing in the Office Park/Commercial Visual Assessment Unit**

- **Visual Assessment Unit 2 – Residential:** The visual character of this unit is dominated by I-405 which, due to its scale and character, is the focus of the views. The adjacent residential areas are separated by walls (either project walls of the development or soundwalls along I-405); however, the trail that parallels I-405 in this unit provides a unique visual aspect and adds to the visual character. Portions of this trail system are found within a high power-line transmission corridor, and the towers associated with the transmission lines also have a large visual presence in the corridor and affect the visual character as a detracting element; however, these elements are at least partially obscured by the vegetation along I-405. Figure 2.1.7-3 shows a typical view of the corridor for this unit.



**Figure 2.1.7-3. SB I-405 approaching the Jeffrey Road/University Drive Interchange within the Residential Visual Assessment Unit**

- **Visual Assessment Unit 3 – High-Rise Office:** The visual character of this unit is dominated by two elements – I-405 and its associated elements and the office buildings that hug the skyline of the unit. These elements in combination provide a contrast in vertical and horizontal lines to viewers. Landscaping, while less dominated by trees than in the Residential Unit, still provides a softening element to the character, particularly at the interchanges where the plantings are more concentrated. A typical view of this unit can be seen in Figure 2.1.3-4.

Overall, the visual character of the proposed project is anticipated to be compatible with the existing character of the project area. The addition of lanes, either the single lane associated with Alternative 2 or the two lanes associated with Alternative 3, would increase the dominance of I-405 to travelers on the freeway due to wider paving; however, the lines and forms would remain the same as existing.



**Figure 2.1.7-4. NB I-405 approaching the Jamboree Road Interchange within the High-Rise Office Visual Assessment Unit**

### *Visual Quality*

Visual quality is evaluated by identifying the vividness, intactness, and unity present in the project corridor. Public attitudes validate the assessed level of quality and predict how changes to the project corridor can affect these attitudes. This process helps identify specific methods for addressing each visual impact that may occur because of the project. The three criteria for evaluating visual quality are defined below:

- **Vividness** is the extent to which the landscape is memorable and is associated with distinctive, contrasting, and diverse visual elements.
- **Intactness** is the integrity of visual features in the landscape and the extent to which the existing landscape is free from nontypical visual intrusions.
- **Unity** is the extent to which all visual elements combine to form a coherent, harmonious visual pattern.

The visual quality of the existing corridor is anticipated to be slightly altered by the proposed project; however, this is expected to be less than substantial. The existing corridor has a moderately high visual quality overall, with all three measurements moderately high. Much of the visual quality is derived from the nature of the existing ROW and the landscaping associated with it. Many freeways of equal lanes do not have the room to include the landscaping associated with this stretch of I-405. Trails and open space also add to the overall

visual quality of the existing corridor. With either alternative, these aspects of the corridor are expected to remain. There would be spot locations where removal of vegetation can be expected (e.g., at some of the locations associated with the ramp reconfiguring).

### **Key Views**

Key viewpoints were selected based on the location of proposed project elements, as well as the presence of sensitive viewer groups, such as found within neighborhoods, parks, schools, and other locations where long periods of time are spent. Therefore, the key views are located within the landscape units where residential development is concentrated. No key views were identified for the High-Rise Office Unit due to there being fewer project elements to be constructed, the nature of these proposed improvements that limit the amount of anticipated impacts, and the lack of large concentrations of highly sensitive viewers. This is not to imply that office workers do not care about the views outside their office windows, but rather that these viewers would have a more limited time viewing any changes and, in this case, the changes anticipated by either of the construction alternatives would be limited in scope and location.

**Key View #1** – This key view is taken from the center point of the Culver Drive OC looking east along the SB lanes of I-405. The view is from the perspective of a pedestrian on the OC, but it could also be applied to a viewer on a bike. Those driving a vehicle on the OC would perhaps see a portion of this view as well, but given the quick crossing time to get across the bridge for these viewers, it is likely that the changes would be less perceivable.

**Key View #2** – Key View 2 is taken from the vantage point of the Yale Pedestrian Crossing over I-405. The view is from the landing along the SB lanes of I-405, looking to the west. I-405 forms the mid-ground to background view of the photo, with the planting associated with the bridge and the recreation trail in the foreground.

**Key View #3** – The photo for this key view is taken from the middle of the SB lanes of I-405 at the Jeffrey Road/University Drive off-ramp. The view is from the perspective of the freeway travelers and is intended to show the potential character of I-405.

**Key View #4** – This key view is from the NB lanes of I-405 immediately west of the SR-133 OC. The view looks to the northwest and is from the perspective of the freeway travelers, and it is intended to show the potential change of character associated with the new braided ramp.

### 2.1.7.3 Environmental Consequences

#### *Alternative 1 (No Build)*

##### **Landscape Units**

Alternative 1 (No Build) does not propose any construction or other disturbance; therefore, this alternative would not result in either permanent or temporary impacts to visual assessment units. No improvements would be implemented.

##### **Key Viewpoints**

Alternative 1 (No Build) does not propose any construction or other disturbance; therefore, this alternative would not result in permanent or temporary impacts to key viewpoints. No improvements would be implemented.

This analysis considered the previous construction of three new or improved SB auxiliary lanes located: (1) between SR-133 and the Sand Canyon Avenue on-ramp, (2) between the Sand Canyon Avenue off-ramp and the University Drive on-ramp, and (3) between the University Drive off-ramp and the Culver Drive off-ramp. These auxiliary lanes are not included as part of this project and were approved with previous environmental documentation.

#### *Alternative 2 (Build – One GP Lane in Each Direction) (Preferred Alternative)*

##### **Landscape Units**

Alternative 2 adds one GP lane in each direction of I-405 and reconfigures some of the existing interchange ramps in the corridor, including the SR-133 interchange, where a new bridge structure is proposed. Three new soundwalls are also proposed and three replacement soundwalls are proposed. Larger-scale vegetation/tree removals are anticipated between Jamboree Road and Jeffrey Road/ University Drive due to widening. In addition, vegetation within certain interchange locations that is associated with ramp reconfigurations would also be affected. Specifically, by Visual Assessment Areas, the following impacts are anticipated:

- **Visual Assessment Unit 1 – Office Park/Commercial:** Some of the largest changes in the existing configuration occur within this unit. The ramps associated with Irvine Center Drive (especially the SB off-ramp) and in the SR-133 interchange (the northwest quadrant in particular) would have the most redesign; therefore, they would have greater impacts to the existing environment than in other interchanges. While the SR-133 interchange is not landscaped, the Irvine Center Drive interchange is well landscaped. It is anticipated that under this alternative, the existing vegetation in the SB off-ramp would be removed by construction of the realigned ramp. In the northeast quadrant of the SR-133/I-405

interchange, a braided ramp and bridge crossing would be constructed; however, the existing interchange is not currently landscaped, so the effects to this aspect of the I-405 corridor would be minimal. The new bridge structure would be seen from I-405 only once the viewer crosses under the two-span OC of SR-133 over I-405 and would be seen to the NB traveler's right. In addition to the bridge, three small retaining walls would be required along the edge of the ROW. These would face out from the corridor into the adjacent office parking lot. There would also be some minor realignment of the ramps at Sand Canyon Drive/Avenue; however, this is anticipated to be a minor realignment that would not affect the existing landscape in the interchange.

The addition of a GP lane in each direction, along with associated auxiliary lanes between SR-133 and Jeffrey Road/University Drive, would push the existing shoulder out approximately 12 feet from its existing location in this stretch of I-405. This would occur on the NB and SB sides of I-405. In most locations, this is not anticipated to affect the existing roadside vegetation, which should remain in place. Along the ramp from WB SR-133 to I-405 (the northeast quadrant of the interchange), realignment of the ramps would push the affected area out farther to approximately the edge of the ROW as the ramp crosses under the Laguna Canyon Road OC; however, there is no landscape associated with this location, so this element of the corridor would not be affected.

As part of the project, Soundwall 114 is proposed within the Office Park/Commercial Unit. This is a new soundwall and is proposed to be approximately 16 feet high and 1,550 feet long. It would be located along the NB lanes between the SR-133 interchange and the Irvine Center Drive. The placement would locate it along the edge of I-405, which would limit views out into the adjoining parking lot and the adjacent southerly crossing of San Diego Creek; however, Soundwall 114 is no longer being proposed. Section 2.2.7, Noise and Vibration, provides more information on this decision.

Alternative 2 would require the removal of six trees in this assessment unit. These all fall within the Irvine Center Drive loop ramp that is being modified.

For Visual Assessment Area 1, the visual character is anticipated to remain nearly the same as the existing with the proposed improvements under Alternative 2. The visual quality, which is currently moderate to moderately high (depending on location in the unit) would likely also remain moderately high, with moderate vividness, and moderately high intactness and unity.

- **Visual Assessment Unit 2 – Residential:** The addition of the GP lane in both directions from Jamboree Road in the High-Rise Office Unit through the Culver Drive interchange to the Sand Canyon interchange would affect the largest change within the Residential Unit. In addition to these lanes, the auxiliary lanes that would be constructed as part of the No Build Alternative between the three interchanges (Culver, Jeffrey/University, and Sand Canyon) would be pushed farther out into the adjacent ROW. Because this ROW is currently landscaped, removal of the vegetation along I-405 would likely be the most noticeable change to the visual environment, outside of the wider pavement section of I-405.

In addition to the addition of lanes in this unit, the ramps at Jeffrey Road/University Drive (NB and SB on-ramps) and at Culver Drive (NB on-ramp) would be realigned. This would necessitate at least a partial removal of the existing vegetation within these loops, as well as along the outside edge of the loops.

Alternative 2 would include construction of two new and two replacement soundwalls in the Residential Unit. Soundwall 255 is 660 feet in length and would be located along the SB lanes at the gore point of the SB I-405 off-ramp at University Drive/Jeffrey Road at a height of 16 feet. Soundwall 322 (Option 1) is approximately 2,132 feet in length and would be constructed along the NB lanes approaching the Culver Drive OC prior to, and at, the gore point to the NB I-405 off-ramp at Culver Drive at an average height of 16 feet. The soundwalls would be located along the edge of the ROW line.

Replacement soundwalls are proposed for two additional locations within this unit. Soundwall 266 is along private property and is proposed to be approximately 204 feet in length and 12 feet in height. Soundwall 228 is along private property and is proposed to be approximately 460 feet in length and 16 feet in height. Two of these walls would be located off the freeway ROW along the back of the adjacent neighborhoods; however, Soundwalls 266 and 228 are no longer being proposed. Section 2.2.7, Noise and Vibration, provides more information on this decision. The other three would be placed within the ROW – one at the SB off-ramp at University Drive/Jeffrey Road, the other along the NB lanes, south of Culver Road, and a third along the SB lanes at the Jamboree Road off-ramp. This wall also has a second alignment option (option ‘B’) that would move it back to the edge of the neighborhood. If this alternative was used, the length of the wall would be reduced from 2,230 LF to 954 LF, and the number of affected trees would be reduced by 17.

Within the Residential Unit, tree removals are anticipated to total 181 for mainline and ramp areas (or 164 with the Option B wall layout). Given the extent of the vegetation/tree

removals, Alternative 2 within the Residential Unit is anticipated to lower the existing visual quality of the corridor from moderately high to moderate, with moderate vividness and intactness and moderately high unity. The visual character of the unit, however, is anticipated to remain consistent with the existing character.

- **Visual Assessment Unit 3 – High-Rise Office:** From Jamboree Road to the edge of this unit at the San Diego Creek Crossing, I-405 would push out into the adjacent landscape ROW along I-405 and the on-ramps from WB Jamboree Road to NB and SB I-405, which would be slightly realigned. In addition to the Jamboree Road interchange, the on-ramp from MacArthur Boulevard to NB I-405 would be realigned. A replacement soundwall is proposed for one location within this unit. Soundwall 417 is along the ROW at SB Jamboree Road off-ramp and is proposed to be approximately 946 feet in length and 20 feet in height. Soundwall 417 is no longer being proposed. Section 2.2.7 Noise and Vibration, provides more information on this decision.

The proposed changes within this unit would require the removal of 49 trees along the existing ROW, primarily in the existing landscaped interchanges or along the proposed soundwall locations. The existing City of Irvine monuments that are found in the Jamboree Road interchange are likely to remain in their current position and with the existing landscaping left intact. This is due to their location high up on the slope near Jamboree Road.

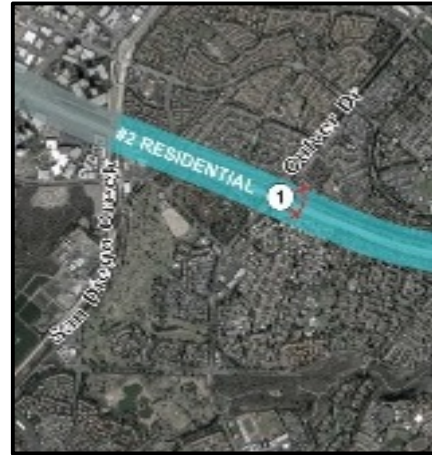
The existing visual character of the High-Rise Office Assessment Unit would be anticipated to remain under Alternative 2. The existing visual quality of moderately high is also likely to remain, because the removal of existing vegetation is geographically limited in this unit to areas around the MacArthur Boulevard interchange.

### **Key Viewpoints**

Four key viewpoints have been identified for Alternative 2. These are located in the Residential and the Commercial/Office Park Visual Assessment units.

*Key Viewpoint #1 (Figures 2.1.7-5 and 2.1.7-6)*

- **Existing Visual Character/Quality:** The existing view off the bridge is dominated by the presence of the eight freeway lanes. Vegetation along the outside edge of I-405, as well as along the back of the neighborhoods, frames I-405 and helps provide a sense of scale to the view. Overall, the view has a moderate visual quality with the vegetation adding to the vividness of the view, while the size and scale of I-405 detracts from the view.
- **Proposed Project Features:** The proposed project features include several new lanes along the NB side of I-405 at the Culver Drive exit ramp. In addition, a new soundwall above a short retaining wall would be constructed along the edge of the shoulder along the NB lanes. New lanes would also be included along the SB side of I-405. The addition of these lanes would result in the removal of the existing vegetation currently found along I-405. In particular, several trees would be removed.
- **Changes to Visual Character:** The reduction in the vegetation along I-405 and the elimination of the existing trees combined with the additional pavement cross section would make I-405 even more dominant in the view. It is unlikely that as many trees would be put back in this area due to required Caltrans setbacks for trees. The soundwall along the NB lanes would limit views into the surrounding area. The area along the NB lanes includes a recreation trail under high-voltage lines/towers. These would be expected to be more visually prominent as well with the removal of trees and because they extend above the anticipated 14-foot height of the soundwall.
- **Anticipated Viewer Response:** Viewers on the Culver Drive OC are anticipated to have a moderately high response level based on sensitivity, which tends to be high, and exposure, which tends to be moderate to moderately high.
- **Resulting Visual Impact:** The overall impact to the corridor visual quality is anticipated to be moderately high, given the moderately high viewer response and the moderately high degree of change to the existing visual character and quality.



**Figure 2.1.7-5. Location of Key Viewpoint #1 in the Residential Visual Assessment Unit**



**Figure 2.1.7-6. Key Viewpoint #1 from the Culver Drive OC,  
looking eastward along SB I-405**

(Note that the “shadows” within the pictures are from the existing chain-link fencing, which would also be present in the constructed view.)

*Key Viewpoint #2 (Figures 2.1.7-7 and 2.1.7-8)*

- **Existing Visual Character/Quality:** I-405 and the bridge crossing dominate the view from the landing, due in large part to their scale within the view. The plantings in the foreground, while present, are low and cannot screen I-405 from the viewer. Overall, the visual quality of the view is moderately low due in large part to the lack of screening elements or elements that might provide a sense of scale to I-405 and the bridge. The existing visual quality of the view is moderate due to the lack of softening or screening elements.
- **Proposed Project Features:** The proposed project features include additional lanes on the NB and SB sides of I-405. It is anticipated that within this view the few trees present along the ROW would remain because they fall either just at the edge or outside of the existing ROW.
- **Changes to Visual Character:** Within this view, I-405 would appear wider than existing, and the new median barrier would be noticeable because it is higher than the existing; however, due to the view being off the corridor looking in, the changes in the view would appear minor.
- **Anticipated Viewer Response:** Viewers on the Yale Pedestrian OC are anticipated to have a moderately high response level based on sensitivity, which tends to be moderately high, and exposure, which tends to be moderate to moderately high.
- **Resulting Visual Impact:** The overall impact to the corridor visual quality is anticipated to be moderate, given the moderately high viewer response and the moderate degree of change to the existing visual character and quality.



**Figure 2.1.7-7. Location of Key Viewpoint #2 in the Residential Visual Assessment Unit**



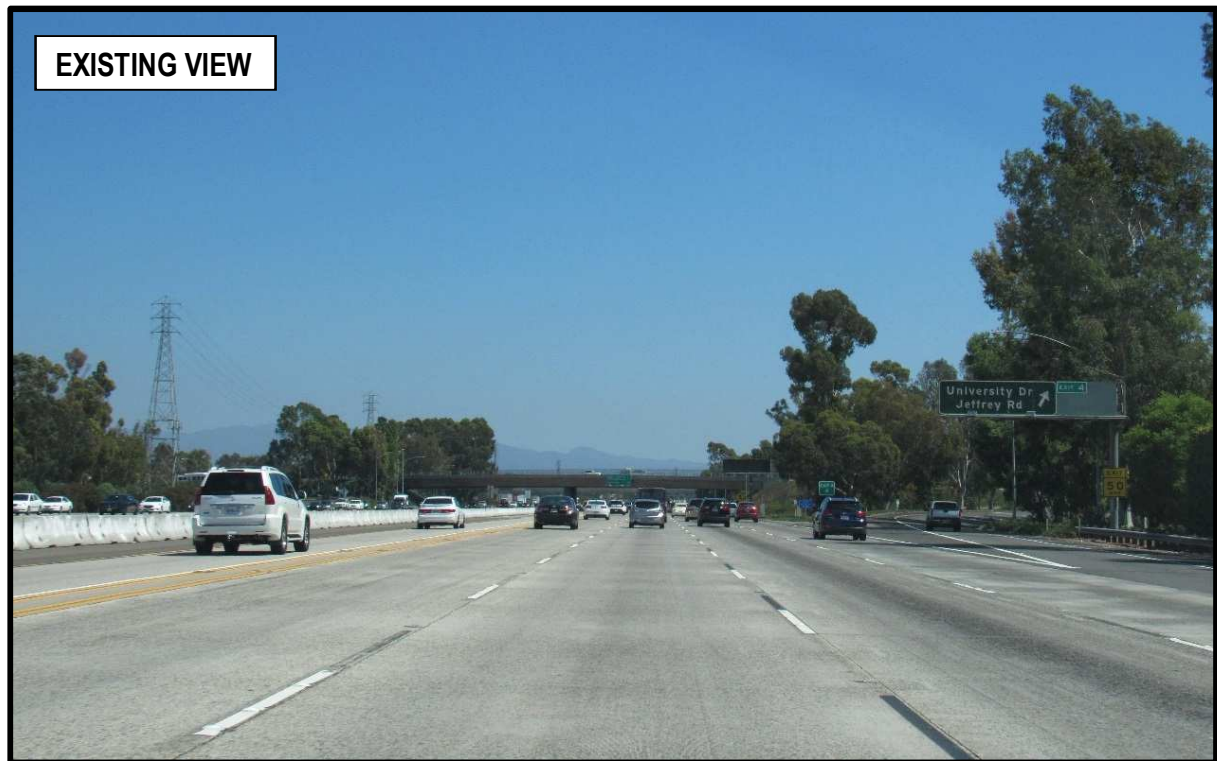
**Figure 2.1.7-8. Key Viewpoint #2 from the Yale Pedestrian OC, looking west along the NB Lanes of I-405 within the Residential Assessment Unit**

*Key Viewpoint #3 (Figures 2.1.7-9 and 2.1.7-10)*

- **Existing Visual Character/Quality:** The existing character of the view is typical for a wide multi-lane freeway in southern California with I-405 dominating the view due to its scale and proportions in the landscape. In this instance, the plantings associated with the Jeffrey Road interchange and, in particular, the large eucalyptus trees, provide a sense of scale to the freeway paving. The existing visual quality of the view is moderate, with the vegetation adding to the overall vividness of the view and the expanse of pavement detracting from the view.
- **Proposed Project Features:** The proposed project features include two additional lanes to the SB sides of I-405. Due to the additional lanes, the gore point for the exit ramp moves farther to the west (i.e., farther north along the SB lanes). In addition to the new lanes, the median barrier would be replaced with a new, slightly taller version, and a soundwall would be constructed along the ROW line along the off-ramp; however, the landscape area is of sufficient depth from the wall that the existing vegetation is anticipated to be able to remain.
- **Changes to Visual Character:** Within this view, I-405 would appear wider than existing, and the new median barrier would be noticeable because it is higher than the existing; however, retention of the existing vegetation within the interchange and along the ramp would help soften these changes and help provide a sense of scale.
- **Anticipated Viewer Response:** Viewers on I-405 are anticipated to have a moderately high response level based on sensitivity, which tends to be high, and exposure, which tends to be moderate to moderately high.
- **Resulting Visual Impact:** The overall impact to the corridor visual quality is anticipated to be moderately high, given the moderately high viewer response and the noticeable change to the existing freeway width.



**Figure 2.1.7-9. Location  
of Key Viewpoint #3 in  
the Residential Visual  
Assessment Unit**



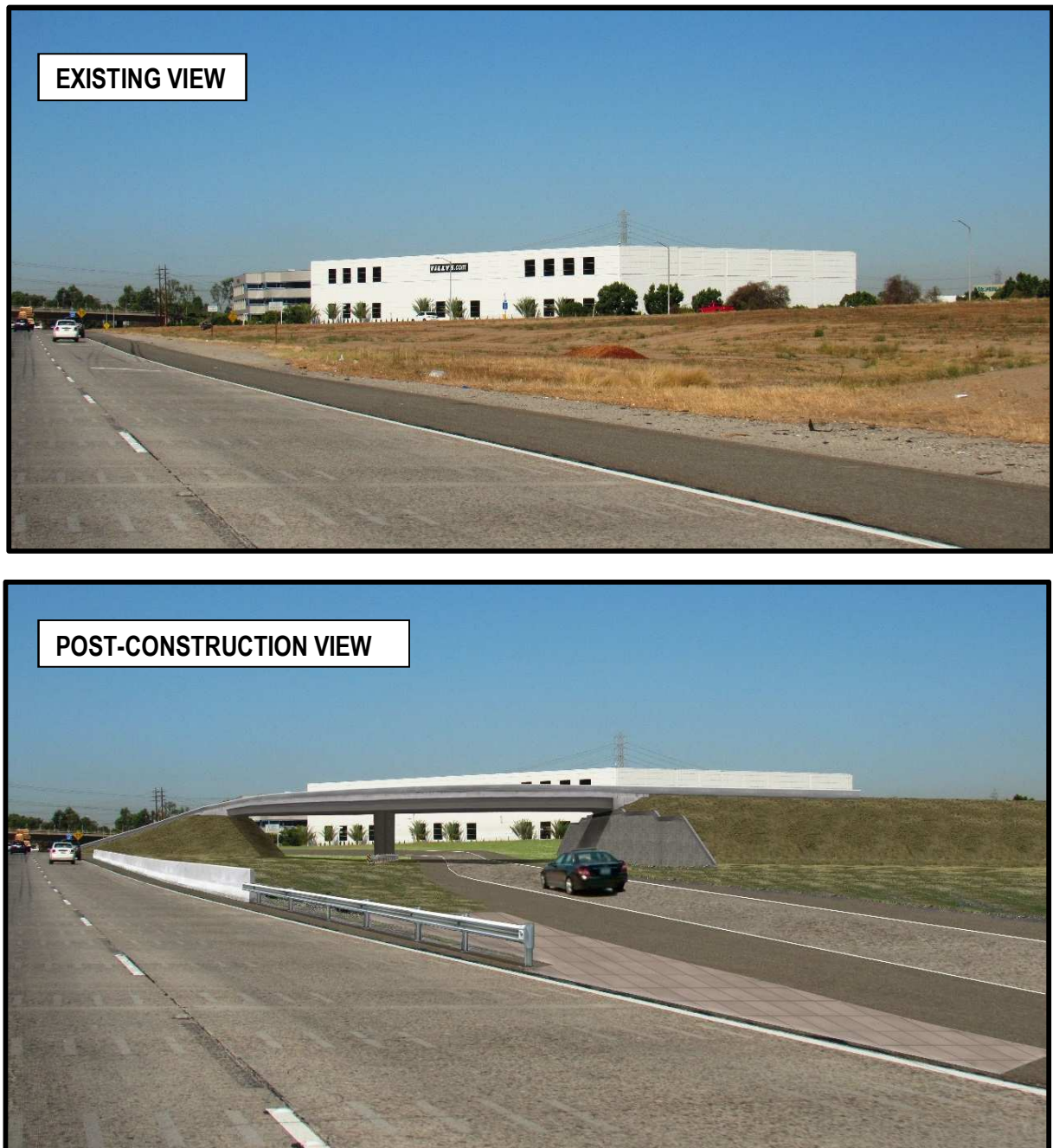
**Figure 2.1.7-10. Key Viewpoint #3 from the SB Lanes of I-405  
at the Jeffrey Road/University Drive Exit**

*Key Viewpoint #4 (Figures 2.1.7-11 and 2.1.7-12)*

- **Existing Visual Character/Quality:** The existing character of the view is typical for an interchange without landscaping. The full scale of the existing I-405 is partially obscured due to the orientation of the photo to the north. The northeast quadrant of the I-405/SR-133 interchange forms the mid-ground view of this image. The existing visual quality of the view is moderately low due to the lack of softening elements.
- **Proposed Project Features:** The proposed project would remove the auxiliary lane from I-405 in this stretch, but a new ramp alignment from SR-133 would necessitate the addition of a bridge OC over the proposed off-ramp in this area. Other elements associated with the bridge include abutment and wing walls on the east abutment and slope paving on the west abutment. In addition, new barrier would be required along I-405.
- **Changes to Visual Character:** The new bridge would obscure some views out from I-405 and the ramps associated with this quadrant out into the adjacent development. Because the I-405/SR-133 interchange is not currently landscaped, there are no softening elements in place and this would remain in the proposed condition.
- **Anticipated Viewer Response:** Viewers on I-405 are anticipated to have a moderately high response level based on sensitivity, which tends to be high, and exposure, which tends to be moderate to moderately high.
- **Resulting Visual Impact:** The overall impact to the corridor visual quality is anticipated to be moderate, given the moderately high viewer response and the moderately low change to the existing freeway. This is in large part due to the improvements being off to the side of I-405 and not directly in the path of the viewer.



**Figure 2.1.7-11. Location  
of Key Viewpoint #4 in  
the Commercial/  
Office Park Visual  
Assessment Unit**



**Figure 2.1.7-12. Key Viewpoint #4 from the NB Lanes of I-405 just west of the SR-133 Bridge OC looking north into the Interchange**

***Alternative 3 (Build – Two GP Lanes in Each Direction)***

While similar to Alternative 2 in many respects, Alternative 3 includes the addition of two GP lanes in each direction rather than the single lane in Alternative 2. This means that the impacts to the vegetation within the existing ROW would be greater than in Alternative 2. The same ramps as in Alternative 2 would be realigned under Alternative 3, and the impacts associated with those would be similar to those described in Alternative 2. Soundwall impacts anticipated under Alternative 3 are the same as those described under Alternative 2, because no additional soundwalls are proposed or removed under Alternative 3.

- **Visual Assessment Unit 1 – Office Park/Commercial:** Changes within the Irvine Center Drive SB off-ramp and within the SR-133 interchange are similar to those described under Alternative 2; however, because of the additional lane, the impacts to the landscaping along the mainline ROW would be greater. A new soundwall would be placed in the Office Park/Commercial Unit as part of Alternative 3; however, this would be the same as what is described under Alternative 2. Approximately six trees would be removed within this unit due to the widening of I-405 and the necessary grading to accomplishing the widening.

I-405, now at six full lanes with supporting auxiliary lanes in each direction, would appear wider than the existing four lanes plus auxiliary lanes and therefore more urban. This, combined with removal of the mature vegetation, would make the freeway character appear more urban and “hard” than the current vegetated freeway. The overall visual quality of the unit would likely drop to moderate, with moderate vividness, intactness, and unity.

- **Visual Assessment Unit 2 – Residential:** The Residential Unit would see a similar widening into the existing landscape ROW as in the previous unit. Given the locations of the existing trees, many of these would likely be removed due to grading along I-405. In addition, new or replacement soundwalls would be placed in the Residential Unit as part of Alternative 3; however, these would be the same as those described under Alternative 2. Given Caltrans’ required setbacks, new plantings associated with any minimization measure would be limited to wider areas of the ROW or within interchanges. Approximately 217 trees would be removed under Alternative 3 for this unit.

Visually, the unit would maintain its overall character; however, the widening would make I-405 even more dominant to viewers, both those on the freeway and those adjacent to and looking in, due to the greater extent of paving. The unit’s visual quality would likely degrade slightly from moderately high to moderate, with moderate vividness, intactness, and unity. These ratings would likely be lower than those discussed under Alternative 2.

- **Visual Assessment Unit 3 – High-Rise Office:** North of San Diego Creek through the Jamboree Road interchange, the same widening out into the adjacent landscape areas would occur as in the previous units. In addition, the bridge over the creek would be widened on the NB side by approximately 12 feet to accommodate the roadway widening. For users of the trail along the creek, the effect would be to increase the cover/ shadow over the trail. The widened freeway would result in the removal of 38 trees within the unit. A replacement soundwall would be placed in the High-Rise Office Unit as part of Alternative 3; however, this would be the same as what is described under Alternative 2.

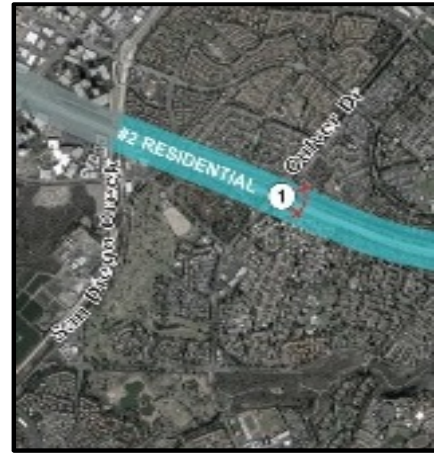
The existing visual quality of the unit would lower slightly to moderate with the wider freeway section and the corresponding reduction in vegetation along the roadway. Vividness, intactness, and unity would likely all be moderate. It is anticipated that the Irvine entry monument would not be affected by this alternative.

### **Key Views**

Simulations for three of the four key viewpoints for Alternative 3 follow; however, the fourth viewpoint, Key Viewpoint 4, is the same as described under Alternative 2.

*Key Viewpoint #1 (Figures 2.1.7-13 and 2.1.7-14)*

- **Existing Visual Character/Quality:** The existing view off the bridge is dominated by the presence of the eight freeway lanes. Vegetation along the outside edge of I-405, as well as along the back of the neighborhoods, frames the freeway and helps provide a sense of scale to the view. Overall, the view has a moderate visual quality, with the vegetation adding to the vividness of the view while the size and scale of I-405 detracts from the view.
- **Proposed Project Features:** The proposed project features include a new auxiliary lane along the NB and SB sides of I-405. New Soundwall 322, with a short retaining wall at the back of the roadside barrier, would also be constructed along the NB lanes. The addition of these lanes would result in removal of the existing vegetation currently found along I-405, but less than along the SB lanes because the proposed design shifts I-405 to the north.
- **Changes to Visual Character:** The reduction in vegetation along I-405 and the elimination of existing trees combined with the additional pavement cross section would make I-405 even more dominant in the view; however, the reduction in trees is more associated with the NB lanes, as well as the addition of the soundwall along the back of the neighborhood. This soundwall along the NB lanes would limit views into the surrounding area. The area along the NB lanes includes a recreation trail under high-voltage lines/towers. These would be expected to be more visually prominent as well with removal of the trees and because they extend above the anticipated 14- to 16-foot height of the soundwall.
- **Anticipated Viewer Response:** Viewers on the Culver Drive OC are anticipated to have a moderately high response level based on sensitivity, which tends to be high, and exposure, which tends to be moderate to moderately high.
- **Resulting Visual Impact:** The overall impact to the corridor visual quality is anticipated to be moderately high, given the moderately high viewer response and the moderately high degree of change to the existing visual character and quality.



**Figure 2.1.7-13. Location of Key Viewpoint #1 in the Residential Visual Assessment Unit**



**Figure 2.1.7-14. Key Viewpoint #1 from the Culver Drive OC  
looking eastward along SB I-405**

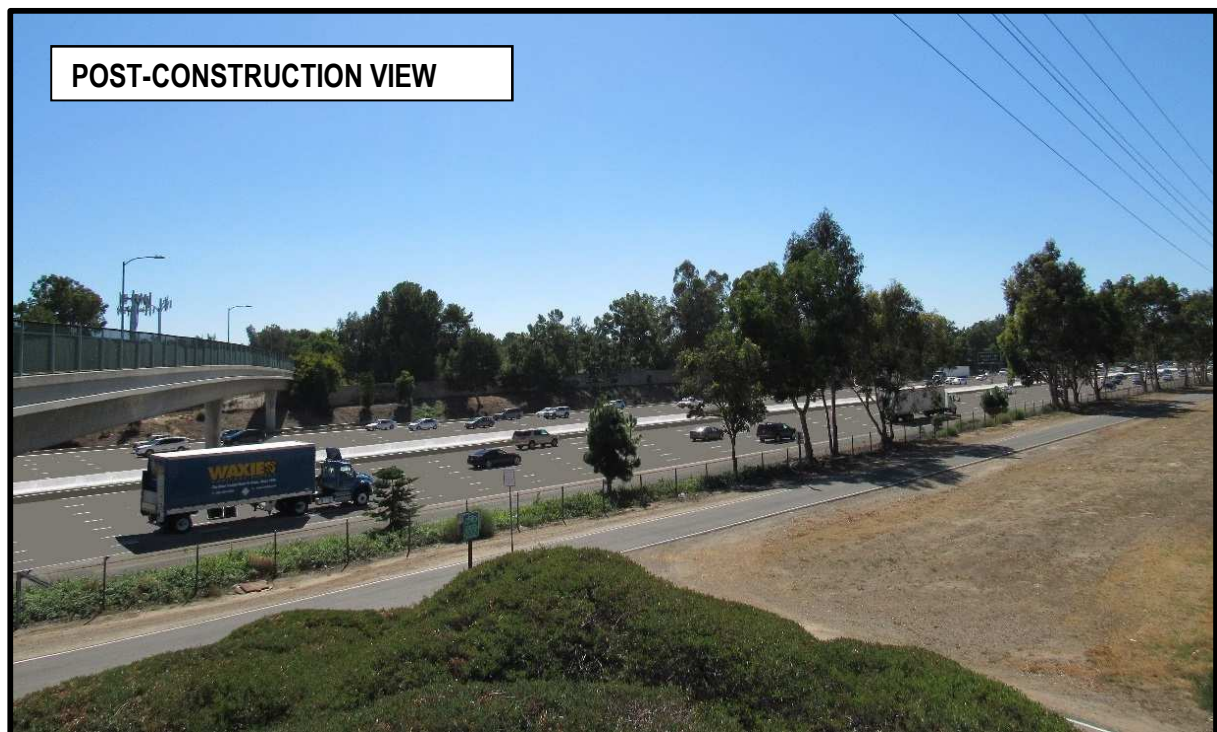
(Note that the “shadows” within the pictures are from the existing chain-link fencing, which would also be present in the constructed view.)

*Key Viewpoint #2 (Figures 2.1.7-15 and 2.1.7-16)*

- **Existing Visual Character/Quality:** I-405 and the bridge crossing dominate the view from the landing, due in large part to their scale within the view. The plantings in the foreground, while present, are low and cannot screen I-405 from the viewer. Overall, the visual quality of the view is moderately low due in large part to the lack of screening elements or elements that might provide a sense of scale to I-405 and the bridge. The existing visual quality of the view is moderate due to the lack of softening or screening elements.
- **Proposed Project Features:** The proposed project features include additional lanes on the NB and SB sides of I-405. It is anticipated that within this view the few trees present along the ROW would remain because they fall either just at the edge or outside of the existing ROW.
- **Changes to Visual Character:** Within this view, I-405 would appear wider than existing, and the new median barrier would be noticeable because it is higher than the existing. While this is similar to the description of Alternative 2, the number of lanes added is different; however, due to the view being off the corridor looking in, the changes in the view would appear as mid-ground elements and be less noticeable.
- **Anticipated Viewer Response:** Viewers on the Yale Pedestrian OC are anticipated to have a moderately high response level based on sensitivity, which tends to be moderately high, and exposure, which tends to be moderate to moderately high.
- **Resulting Visual Impact:** The overall impact to the corridor visual quality is anticipated to be moderate, given the moderately high viewer response and the moderate degree of change to the existing visual character and quality.



**Figure 2.1.7-15. Location  
of Key Viewpoint #2 in  
the Residential Visual  
Assessment Unit**



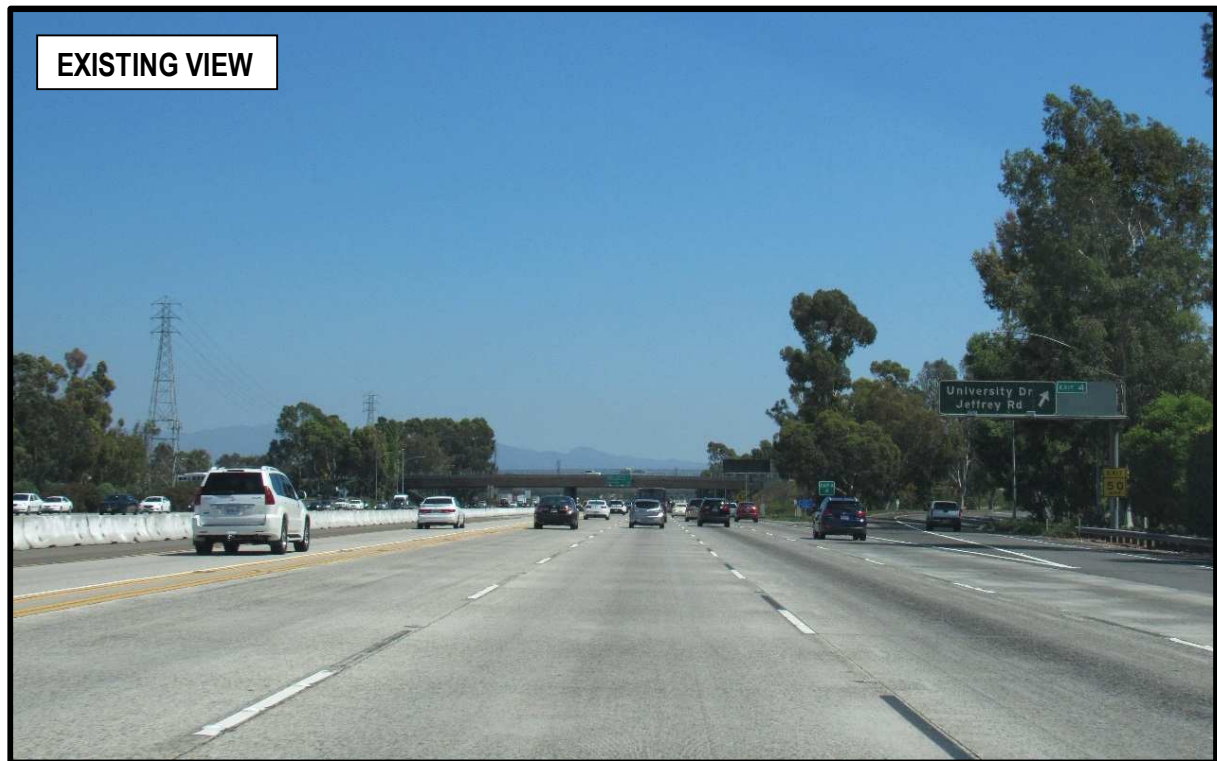
**Figure 2.1.7-16. Key Viewpoint #2 from the Yale Pedestrian OC, looking west along the NB Lanes of I-405 within the Residential Assessment Unit**

*Key View #3 (Figures 2.1.7-17 and 2.1.7-18)*

- **Existing Visual Character/Quality:** The existing character of the view is typical for a wide multi-lane freeway in southern California with I-405 dominating the view due to its scale and proportions in the landscape. In this instance, the plantings associated with the Jeffrey Road interchange and, in particular, the large eucalyptus trees provide a sense of scale to the freeway paving. The existing visual quality of the view is moderate, with the vegetation adding to the overall vividness of the view and the expanse of pavement detracting from the view.
- **Proposed Project Features:** The proposed project features include two additional lanes to the SB side of I-405; however, unlike Alternative 2, the gore point for the exit ramp does not shift to the west. This alternative would also replace the median barrier with a new, slightly taller version, and a soundwall would be constructed along the ROW line along the SB off-ramp; however, the landscape area is of sufficient depth from the wall that the existing vegetation is anticipated to remain.
- **Changes to Visual Character:** Within this view, I-405 would appear wider than existing, and the new median barrier would be noticeable because it is higher than the existing; however, retention of the existing vegetation within the interchange and along the ramp would help soften these changes and help provide a sense of scale.
- **Anticipated Viewer Response:** Viewers on I-405 are anticipated to have a moderately high response level based on sensitivity, which tends to be high, and exposure, which tends to be moderate to moderately high.
- **Resulting Visual Impact:** The overall impact to the corridor visual quality is anticipated to be moderately high, given the moderately high viewer response and the noticeable change to the existing freeway width.



**Figure 2.1.7-17. Location  
of Key Viewpoint #3 in  
the Residential Visual  
Assessment Unit**



**Figure 2.1.7-18. Key Viewpoint #3 from the SB Lanes of I-405  
at the Jeffrey Road/University Drive Exit**

### ***Build Alternative 2 (Preferred Alternative) and Build Alternative 3***

New soundwalls along the corridor would limit views out from the corridor into the surrounding landscape. However, in many locations, the soundwalls would be replacing existing walls with taller structures, so the views may already be affected. Other elements, found in both alternatives are retaining walls in three locations along the corridor (at SR-133, at Laguna Canyon Road, and at Culver Drive) and a new braided ramp and bridge in the I-405/SR-133 interchange. The visual quality of the existing corridor would be altered by the proposed project. The existing corridor has a moderately high visual quality derived from the nature of the existing ROW and the landscaping associated with it. Many freeways of equal lanes do not have the room to include the landscaping associated with this stretch of I-405. Trails and open space also add to the overall visual quality of the existing corridor. With either alternative, these aspects of the corridor are expected to remain. Additionally, the Irvine entry monument would not be affected by the build alternatives.

### **Construction (Short-Term) Impacts**

The project would temporarily have a moderately high impact to the existing visual character and quality of corridor. The project would require the removal of 236 and 272 trees, for Alternatives 2 and 3, respectively. This would temporarily reduce softening elements along the highway that can alleviate the expanses of paving and provide scale to the highway structures. This impact would be temporary because replanted skyline trees within available highway ROW would mature to more than 40 feet in height and would help restore the visual character of the corridor over time. There would be spot locations where removal of the vegetation can be expected (e.g., at some of the locations associated with the ramp reconfiguring). However, these plantings would also be replaced as part of the landscaping plan for the project. Additionally, pursuant to City of Irvine Municipal Code Section 5-7-410, a permit is required to remove any significant tree on public or private land. The build alternatives would adhere to all criteria for permits and tree replacement ratios as specified in the ordinance.

Additional construction impacts would include construction/laydown yards likely to be in interchange areas within the project limits. Construction equipment, concrete forms, supplies, and sheds would be located in these areas. The items in these yards would be visually present to viewers. Other temporary visual impacts would be found with the demolition of existing elements of roadways and streetscapes, construction signage, and flaggers.

#### **2.1.7.4 Avoidance, Minimization, and/or Mitigation Measures**

The following avoidance, minimization, and/or mitigation measures will be implemented with the project and will minimize or avoid impacts related to specific visual impacts. These would

be designed and implemented with concurrence of the District Landscape Architect. Standardized measures which are employed on most, if not all, Caltrans projects are indicated in bold.

***Measures to Preserve Existing Vegetation***

- VA-1: Beginning with preliminary design and continuing through final design and construction, save and protect as many trees in the project area as feasible.
- VA-2: Survey exact locations for trees and include in the plan set.
- VA-3: Protect the drip zone of isolated trees with temporary fencing.
- VA-4: Protect large infield areas of existing plantings to be preserved with temporary fencing.

***Measures for Landscape Plantings***

- VA-5: For portions of the freeway designated as a “Classified Landscaped Freeway,” and where landscaping/trees will be removed, every effort will be made to keep this designation by creating areas for replacement landscaping.

***Measures Addressing Glare***

- VA-6: For all new or relocated light fixtures and other sources of glare, provide shielded fixtures that prevent light trespass onto adjacent properties.

***Measures for Corridor Aesthetics***

- VA-7: For the application of aesthetics and landscape in the corridor, follow the guidelines established in Caltrans/OCTA’s Master Plan of Freeway and Transit Corridor Enhancements (1995) to develop a project-specific master plan of landscape and aesthetics.

***Measures for Structural Aesthetics***

- VA-8: Beginning with preliminary design and continuing through final design and construction, develop construction plans that apply aesthetic treatments to the proposed bridges in the corridor that follow the guidelines in the Corridor Master Plan.
- VA-9: Develop ornamental fencing for all pedestrian fencing on all overcrossings, pedestrian bridges, or other elements associated with pedestrian traffic.

VA-10: Beginning with preliminary design and continuing through final design and construction, develop construction plans that apply aesthetic treatments to the retaining walls and follow the guidelines in the Corridor Master Plan.

VA-11: Beginning with preliminary design and continuing through final design and construction, develop construction plans that apply aesthetic treatments to the soundwalls and follow the guidelines in the Corridor Master Plan.

***Measures for Landscape Plantings***

VA-12: Provide replacement at the rate determined by the Caltrans District Landscape Architect. At a minimum, use a replacement ratio of 2:1, unless a higher ratio is required by the District Landscape Architect, to address the large number of removals that have occurred in the corridor.

VA-13: Include Caltrans maintenance access roads through the landscape so that these elements are integral to the overall design.

VA-14: Include skyline trees in the planting palette to bring down the scale of the new freeway elements.

VA-15: Provide vine plantings on one or both faces of soundwalls wherever feasible (given Caltrans setback and maintenance requirements). If vines are only planted on one side of the wall, vine portals will be included in the design of the wall to accommodate vine access to both sides of the wall.

VA-16: Develop and implement plans to landscape and revegetate disturbed areas, as directed by the Caltrans District Landscape Architect. These shall facilitate coordination between various construction stages to ensure that planting is not completed until construction in that area is complete and no further disturbance will occur.

VA-17: In coordination with the District Landscape Architect, plant trees to the maximum extent feasible, given space constraints, to provide screening of the facility and structures.

VA-18: Include a permanent irrigation system to all plantings. All irrigation shall follow the latest requirements for design and installation, including any requirements associated with drought, water restrictions, recycled water use, and water conservation as required by Caltrans.

- VA-19:** Include an extended 3-year maintenance period as part of the construction period to provide a single source of maintenance through the establishment period.

***Measures for Stormwater Treatment Facilities***

- VA-20:** Beginning with preliminary design and continuing through final design and construction, use drainage and water quality elements, where required, that maximize the allowable landscape.
- VA-21:** Locate basins so that they would be at least 10 feet from the edge of the Caltrans plant setback to allow landscape screening to be installed.
- VA-22:** Design infiltration/detention basins so that they appear to be a natural landscape feature, such as a dry streambed or a riparian pool. They should be shaped in an informal, curvilinear manner to the greatest extent possible.
- VA-23:** Basin slope grading shall incorporate slope rounding, variable gradients, and be similar to the surrounding topography to de-emphasize the edge. If a wall or hard feature is necessary, it shall be worked into the overall design concept.
- VA-24:** Locate maintenance access drives in unobtrusive areas away from local streets. Such drives shall consist of inert materials that are visually compatible with the surrounding landscape.
- VA-25:** Basins shall be designed so that chain-link perimeter fencing is not required.
- VA-26:** Revegetate any side slopes of detention and/or stormwater basins, as well as any bioswales, with container plantings. These plantings must be integral to the other replacement plantings in the corridor.
- VA-27:** Design all visible concrete structures and surfaces to visually blend with the adjacent landscaping and natural plantings.
- VA-28:** Design rock slope protection to consist of aesthetically pleasing whole material with a variety of sizes.
- VA-29:** Limit the use of bioswales within corridor landscape areas. If they must be used, locate them in nonobtrusive areas and the design shall appear natural to the greatest extent possible.

*Measures for Decorative Paving*

- VA-30:** Provide decorative paving in all areas beyond the gore, to the length and widths shown in the Highway Design Manual Figure 504.2A (36-foot width from edge of pavement to edge of pavement).
- VA-31:** Provide decorative paving in all medians and parkway strips too narrow to plant. Decorative paving shall consist of a texture and color that contrasts with adjacent sidewalk or roadway paving.